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# **Historic Preservation Skills and Crafts Career Field**

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## **Curriculum**

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## **MISSION STATEMENT**

This career field provides historic preservation trade skills development training to National Park Service employees and NPS partners. It focuses exclusively on the maintenance, repair, and preservation of historic structures, including National Historic Landmarks and cultural landscapes.

## **PURPOSE**

To ensure that NPS employees acquire the knowledge and skills needed to preserve and maintain the National Park Service's historic structures and cultural landscapes.

## **OCCUPATIONAL GROUPS**

The Historic Preservation Skills and Crafts Career Field focuses on the Knowledge, Skills and Abilities (KSA) necessary for maintenance and cultural resources employees to preserve, maintain, and repair the thousands of National Park Service prehistoric, historic and cultural resources. Most employees perform historic preservation work solely because the historic structure is located in their park.

The career field includes employees in the following occupational series: Exhibits Specialist (Restoration), Preservation Specialist, Preservation Gardener, Mason, Masonry Worker, Wood Worker, Woodcrafter, Carpenter, Carpentry Worker, Painter, and Painting Worker. To a limited extent, it also includes the following occupational series: Architectural Historian, Architectural Technician, Historical Architect, Facility Manager, Conservator, Landscape Architect, Horticulturist, Maintenance Mechanic, Maintenance Worker, Laborer, and other positions that may be called upon to perform work on historic structures and cultural landscapes.

## **ESSENTIAL COMPETENCIES**

Essential Competencies are the vital knowledge, skills, and abilities of a career field that are critical for an employee to perform effectively at his or her level. Essential competencies have been written for the following positions: Exhibits Specialist, Historical Craftsperson, Historical Maintenance Person, and Preservation Gardener. They are listed below. The competencies have been grouped in three performance levels--entry, developmental, and full performance.

## **HOW TO ATTAIN ESSENTIAL COMPETENCIES**

### **Exhibits Specialist**

#### **Entry Level**

These competencies identify the knowledge, skills, and abilities required to perform basic preservation maintenance, repair, and treatment of historic structures. Work is performed under close supervision with emphasis on safety and knowledge of historic preservation philosophy.

- I. Project Planning/Supervision

- A. Risk Management
  - B. Project Documentation
  - C. Project Management
- II. Trade/Craft Skills
  - A. Trade skills
  - B. Tool use and maintenance
  - C. Differentiate between period and contemporary work
- III. Preservation Policies, Standards, and Guidelines
  - A. Secretary of the Interior standards

#### Knowledge, Skills, and Abilities

- Basic knowledge of materials safety, environmental or other workplace hazards and respond appropriately.
- Ability to properly use and maintain personal protective equipment.
- Basic knowledge of construction documents and the ability to carry out preservation tasks.
- Ability to provide basic field documentation.
- Basic knowledge of contemporary and period fabrication/construction.
- Ability to use and maintain hand tools, portable power tools, and stationary power tools in safe operating condition.
- Basic knowledge of the preservation trade(s) (e.g., carpentry, masonry, painting, etc.).
- Skill in assisting preservation craftspersons in the execution of a variety of tasks while performing preservation maintenance work on historic structures.
- Skill in assisting senior exhibits specialist in project management of preservation projects.
- Working knowledge of preservation treatment as specified in the Secretary of the Interiors Standards for Treatment of Historic Properties, and DO-28, Cultural Resources Management Guidelines.

#### NPS Training to Attain These Competencies

##### Safety Awareness for Maintenance

This four-day course introduces the participant to the health and safety hazards involved in maintenance work. It will provide the participant with the knowledge and skills needed to prevent injury and illness in the work environment. The OSHA regulations for the following topics will be covered: hazard awareness/communication, electrical, fall protection, scaffolding,

stairways and ladders, use of fire extinguishers, lead paint awareness, asbestos awareness, personal protective equipment, motorized construction equipment, and tool safety. It is appropriate for entry, developmental, and full performance level employees.

#### Understanding the Principles of Historic Preservation

This is an introductory course for maintenance employees. It is designed to provide them with the background information needed to increase their sensitivity to the preservation the historic resources of the park.

#### Working with the Secretary of the Interior's Standards

In order for persons responsible for the stewardship and maintenance of historic properties to comply with policies, standards, and guidelines it is necessary to have a thorough understanding of appropriate treatments and the various documents that guide a preservationists work. This course will examine the Secretary of the Interior's Standards and the four treatment approaches. It will emphasize practicalities with ways to employ creativity and flexibility.

#### Shop Safety

During this workshop, participants learn how to safely turn on, use, and turn off shop equipment, including lock out tag out procedures.

#### Intermediate Shaper Use and Custom Millwork Replication

This workshop includes primarily hands-on training to replicate historic millwork using the shaper, table saw, router, and hand scrapers. Participants will learn the entire process of replicating historic millwork, from collecting a representative sample to milling the final product. Shop safety, equipment set-up, knife and cutter selection, layout, and grinding will all be thoroughly covered. Routine understanding and use of shop stationary power equipment is a requirement for this workshop.

#### Window Repair Workshop

This workshop includes primarily hands-on training to repair and preserve historic windows and associated woodwork. The format of the training will be a highly intensive developmental work experience in which trainees will gain knowledge, skill and ability by performing actual work on the historic windows. They will learn techniques for window rehabilitation including condition assessment, tool mark identification and reproduction, sash removal, putty and glass removal, woodworking equipment and hand tool use, wood Dutchman repairs, re-glazing, and painting.

#### Alternate Sources of Training

A variety of non-NPS sources offer training

### Developmental Level

These competencies identify the knowledge, skills, and abilities required to perform advanced level preservation maintenance, repair, and treatment of historic structures. Work is performed under normal supervision with continued emphasis on safety and historic preservation treatment techniques.

- I. Project Planning/Supervision
  - A. Risk Management
  - B. Project Planning
  - C. Perform condition assessments
  - D. Project Management
- II. Trade/Craft Skills
  - A. Intermediate Trade skills
  - B. Diagnosis of deterioration and defects
- III. Preservation Policies, Standards, and Guidelines
  - A. Interpret and apply policies, standards, and guidelines

### Knowledge, Skills, and Abilities

- Ability to recognize and mitigate materials, environmental or other common workplace hazards.
- Ability to interpret preservation policies, standards, and guidelines and apply them to the definition and execution of preservation projects.
- Ability to utilize appropriate materials, supplies and tools to maintain and preserve the integrity of historic structures.
- Working knowledge of a preservation trade(s)
- Working knowledge of the interrelationship between various types of building systems and components.
- Ability to detect deterioration or defects in period work, to diagnose probable causes, and recommend treatments
- Working knowledge of and ability to use period construction tools, materials, and methods
- Ability to assist in performing condition assessments on historic structures

- Ability to prepare documentation of existing conditions, scopes of work, cost estimates, procurement documents, and post-construction documentation.
- Ability to evaluate and direct the work of preservation workers in the range of trades applicable to historic preservation.
- Serve as COTR on historic preservation projects.
- Ability to manage a small preservation project while maintaining project schedule, meeting project goals, maintaining communication lines, and staying within project budget.

### NPS Training to Attain These Competencies

#### Preservation Maintenance: Interpreting & Applying the Laws, Standards, Policies and Guidelines

This course is designed for preservation specialists responsible for the care of historic properties. The course will enable participants to increase their effectiveness and awareness during involvement with preservation activities and allow them to apply appropriate treatments.

#### Diagnosis Deterioration!

This course introduces participants to the basic process of building diagnosis, which includes inspection, building record review, information interviews and testing. They will learn about cause and effect and will learn to identify the root causes of common building failures. The participant will learn to develop appropriate remedies that treat root causes rather than symptoms of the building failures and to make treatment recommendation used in preservation maintenance.

#### Take Two Aspirin And Call Me In The Morning!

Is your building too wet for fire training? Is your building deteriorating right before your eyes? Tired of dealing with the same aches and pains day after day? In this course, the learner will be introduced to the process of building diagnoses, which includes inspection, building record review, interviews, and testing. They will learn about cause and effect and will learn to identify the root causes of common building failures. The participant will learn to develop appropriate remedies that treat root causes rather than symptoms of building failures and to make treatment

recommendations used in preservation maintenance. Learners will participate in producing a Condition Assessment Report on an actual historic structure.

### Managing & Supervising Small Preservation Projects

This course is designed for learners who have a basic knowledge of workplace safety, preservation trades and construction techniques. Learners who have the ability to work from construction documents and previous experience assisting with project direction and evaluation will benefit from an advanced training in.... The learners will be exposed to the steps in planning and executing small preservation projects such as preparing scopes of work, cost estimates, project agreements and managing schedules and budgets.

### Alternate Sources of Training

A variety of non-NPS sources offer training

### Full Performance Level

These competencies identify the knowledge, skills, and abilities required for the preservation maintenance, repair, and treatment of historic structures at the full performance level. Work is performed with little direct supervision and with oral and written instruction. Individual will be able to schedule work, lead crews to perform tasks, and determine types and amounts of material.

- I. Project Planning/Supervision
  - A. Risk Management
  - B. Project Management
  - C. Supervise Preservation Project
- II. Trade/Craft Skills
  - A. Journey-Level Trade Skills
  - B. Recommend treatments
  - C. Evaluate/apply state-of-the art techniques
  - D. Develop and offer preservation training
- III. Preservation Policies, Standards, and Guidelines
  - A. Instruct others in interpretation/application

### Knowledge, Skills, and Abilities

- Ability to develop and administer a workplace safety program.

- Advanced knowledge of and the ability to instruct others in the interpretation and applications of preservation policies, standards, and guidelines.
- Advanced knowledge of the preservation trade(s) and the ability to apply preservation skills in a broad range of crafts related to the practice of historic preservation.
- Ability to conduct condition assessments and develop treatment recommendations for historic structures.
- Ability to evaluate and apply state-of-the-art materials and technologies to the preservation of historic structures and possess an awareness of associated cultural resources.
- Ability to successfully manage a complex preservation project.
- Ability to evaluate and direct the work of preservation workers in the range of trades applicable to complex historic preservation projects.
- Ability to develop training activities in a range of preservation related trades.
- Ability to serve as a Contracting Officers Technical Representative (COTR) on complex preservation projects.

#### NPS Training to Attain These Competencies

#### Taking the Lead!

This course is structured in two modules. Module #1 addresses competencies through in-class presentations. Module #2 addresses needs associated with this learning through participation in a "shadow detail" with NPS employees currently assigned to this type of work. Topics to be covered during the in-class sessions of this course include preparing scopes of work, estimating, programming and budgeting, sequencing of tasks, identifying and procuring fiscal and human resources, specifying and procuring materials, managing a diverse workforce, and customer service. During module #2 participants will participate in an actual project assisting project managers.

#### Alternate Sources of Training

A variety of non-NPS sources offer training



## Historical Craftsperson

### Entry Level

- Basic knowledge of materials safety, environmental and other workplace hazards and the ability to respond appropriately.
- Working knowledge of the proper use and maintenance of personal protective equipment.
- Basic knowledge of the Secretary of Interior's Standards for the Treatment of Historic Properties and NPS-28, Cultural Resource Management Guidelines.
- Basic knowledge that damage or destruction of historic and/or archeological evidence can occur during treatment/construction projects.
- Basic knowledge of methods to remove, identify, salvage, and store historic structure materials and artifacts during treatment/construction projects.
- Ability to select, use, and maintain a variety of tools, materials and equipment.
- Ability to interpret construction documents in the lay out of work.

### NPS Training to Attain These Competencies

#### Preservation Safety 101

This course introduces the NPS maintenance person working on historic resources to workplace hazards, materials safety and environmental issues relevant to basic safety and safety issues specific to the historic preservation field. Also included will be training on the proper use and maintenance of personal protective equipment.

#### Applying Hands-On Preservation Skills Should I or Shouldn't I? – Basic Historic Preservation Skills

In addition to enhancing awareness and understanding of the fundamentals of preservation standards and practices – this course will provide introductory exposure to historic fabric treatment and techniques.

#### Preservation Tool Belt

This course will provide an overview of a variety of tools, materials and equipment used to successfully complete historic preservation projects.

#### Introduction to Laying out the Work

This course will expose students to a variety of construction documents used to plan and complete preservation projects. This includes reading drawings, understanding specifications, project agreements and other documents will be reviewed.

### Alternate Sources of Training

A variety of non-NPS sources offer training

### Developmental Level

- Ability to recognize and mitigate materials safety, environmental, and other workplace hazards.
- Working knowledge of compliance with the law in preservation craft work.
- Working knowledge of additional sources of preservation related information, who the sources are, where to find them, and when to call them for help.
- Working knowledge of traditional and historical craft skills.
- Working knowledge of traditional building materials and finishes.
- Ability to identify deteriorated building materials and skill in replacing the deteriorated component as needed.
- Ability to differentiate between contemporary and historic building materials and methods.
- Ability to understand technical information produced as reference materials.
- Ability to work accurately from construction documents or oral instructions to procure supplies, materials, and equipment for work assignment.
- Ability to perform preservation maintenance for various building materials and structures.
- Ability to assist in the reassembly of historic building components after they have been dismantled.

### NPS Training to Attain These Competencies

#### Rules of the Game – Preservation Laws

It's the law!! Preservation craft work is subject to compliance with several laws as part of the process of preserving cultural resources. This course will provide an overview of the important laws as they apply to historic craft work practices including the National Historic Preservation Act of 1966, as amended, the National Environmental Protection Act, the Antiquities Act, NAGPRA, RICRA, Americans with Disabilities Act, Title X.

### Discover the Resources

This course provides students with the working knowledge to research preservation related information, discover the sources, and learn how they can help during the course of the project.

### Sticks and Stones

This course provides an in-depth overview of the evolution of craft skills, building materials, and methods of construction. This course could be multi-faceted to include classroom, demonstration and separate or later field trips and hands-on cross over project work.

### Preservation Doctor Diagnosis: Deterioration

An in-depth overview of the development of building materials and how deterioration occurs and progresses. Learn how to diagnosis deterioration symptoms and make appropriate repairs.

### Learning the Lingo/Tech Talk!

This course will help the individual to expand their ability to understand a wide variety of technical references used in preservation projects. This includes an enhanced understanding of how to work accurately from many types of construction documents, including other technical aspects of project management, such as procurement.

### Alternate Sources of Training

A variety of non-NPS sources offer training

### Full Performance Level

- Knowledge of the interdisciplinary preservation process.
- Advanced knowledge of traditional building materials and finishes.
- Working knowledge of the interrelationship between various types of building systems and components.
- Ability to provide field documentation of treatments to historic fabric.
- Ability to translate and explain to others materials safety, environmental, and other workplace hazards.
- Ability to translate and explain to others the levels of treatments that are consistent with the Secretary of Interior's Standards for the Treatment of Historic Properties and NPS-28, Cultural Resource Management Guidelines.

- Skill and ability to identify, recommend and implement appropriate corrective/preservation treatments for standard/routine condition deficiencies.
- Ability to apply preservation skills in a broad range of crafts related to the practice of historic preservation.
- Skill in repairing or replacing period elements and using appropriate tools, methods, and materials.
- Ability to apply knowledge of current technologies in historic preservation to the maintenance and repair of historic structures.

### NPS Training to Attain These Competencies

#### The Interdisciplinary Preservation Process – A Teamwork Approach

This overview course explains how individual preservation activities relate to the team picture of preserving cultural resources. It will explore recommended and not recommended activities for each of the preservation disciplines including archeology, historic architecture, historic landscapes, maintenance, and historic furnishings and discuss the impacts of activities on other fields. It will examine and propose an interdisciplinary approach to problem solving and managing cultural resources.

#### Advanced Craftsmanship for the Trades Person

This course is designed for the experienced craftsperson and places an emphasis on the special, unique and decorative aspects of the particular trade including tools, materials and methods. It will cover topics such as replicating historic tool marks and patterns, blending new work with old, understanding complex shapes and assemblies, decorative and artistic techniques, and the integration of modern materials.

#### How Buildings Work

This course will provide a comprehensive overview of the impact of building systems on historic fabric and the performance of building components. Learn how existing systems such as HVAC, electrical, plumbing, and drainage should work and recognize how historic fabric can be damaged. Learn how building components such as roof, wall, and foundation assemblies are suppose to work. Information will be presented in a do/do not format using NPS building examples. New technologies will also be presented to demonstrate state of the art, low impact approaches to the integration of these systems with historic building components.

### PRESERVATION SKILLS WORKSHOP

This hands-on workshop is intended for developmental and full performance level maintenance involved in the preservation and maintenance of their park's historic structures. It focuses on craft skills, treatment techniques, and materials selection and application. Sessions include topics such as how to determine the appropriate preservation method, identifying masonry

deterioration, and identifying wood and paint deterioration. Participants will study treatment techniques and then practice specific skills in hands-on sessions on an actual historic preservation project.

### Alternate Sources of Training

A variety of non-NPS sources offer training

### Historical Maintenance Person

#### Entry Level

- Basic knowledge of maintenance safety practices.
- Ability to properly use personal protective equipment.
- Basic knowledge of the principles and objectives of preservation and recognizing the need to minimize damage, deterioration and/or alteration of historic structures.
- Ability to use common hand tools.
- Basic understanding of building materials and the ability to perform basic maintenance techniques.
- Basic knowledge in the use of common power tools and common construction equipment.

### NPS Training to Attain These Competencies

#### Introduction to Maintenance Safety and Personal Protective Equipment

In today's work environment, nearly all work activities are regulated by OSHA Guidelines. This course is designed to meet many of the basic certifications required for preservation maintenance workers. This course will introduce the participants to safety hazards they would be exposed to while working on a historic structure. Topics to be covered include hazard awareness, fall protection, scaffold training, and lead paint awareness. OSHA requirements will be met. Participants will also have base line BLL established for lead and ZPP. Pulmonary function tests will be given to and respirator fit tests also proper respirator selection and use to include fit testing. During the course, you will be given a personal respirator.

#### Introduction To Historic Preservation

During this workshop, the participants will be introduced to the over-arching principals that guide NPS employees in the preservation of our nation's treasures. Key concepts such as repairing rather than replacing, reversibility, and doing no harm will be explored. All information presented in the workshop will directly relate to daily preservation maintenance activities.

## Introduction To The Tools, Materials And Techniques Used In Preservation Maintenance

This course is an introductory course for which there are no pre-requisites. Participants will be instructed in the proper use of common hand tools such as saws, planes, chisels, levels and measuring rules. As part of the course participants will construct and paint a simple wood panel door. Instructors will explain material selection choices and the pros and cons of various materials and maintenance techniques.

## Preservation Work Assignment

In order to become a more versatile preservation maintenance worker it's necessary to occasionally acquire new skills. Come spend two weeks working with the HPTC masonry crew repointing. The participant will learn the following:

- Mix mortar by hand and by using power equipment
- Rake mortar joints using hand and with power equipment
- Repoint a stone and brick masonry

The employees will acquire basic skill in the use of angle grinders, short stroke pneumatic tools, and become familiar with the safe operation of generators, compressors and mortar mixers.

## Alternate Sources of Training

A variety of non-NPS sources offer training

## Developmental Level

- Ability to recognize and mitigate material, environmental or other workplace hazards.
- Basic knowledge of preservation concepts that are consistent with the Secretary of Interior's Standards for the Treatment of Historic Properties.
- Basic knowledge of how to protect historic and/or archeological materials and artifacts during treatment.
- Ability to execute basic maintenance of historic features and materials.
- Ability to use and maintain common power tools and common construction equipment.
- Ability to demonstrate basic-level skill in at least one building trade as it applies to maintaining historic structures.

## NPS Training to Attain These Competencies

## Alternate Sources of Training

A variety of non-NPS sources offer training

### Full Performance Level

- Ability to recognize materials safety, environmental, other workplace hazards and responds appropriately.
- Ability to understand the Secretary of Interior's Standards for the Treatment of Historic Properties, DO-28, Cultural Resource Management Guidelines, NEPA, and the National Historic Preservation Act of 1966, as amended.
- Ability to address compliance with the law in preservation craft work.
- Knowledge of how to remove, identify, salvage, and store historic structure materials and artifacts during treatment/construction projects.
- Ability to select proper tools and materials.
- Ability to interpret basic construction documents and layout work.
- Working knowledge of interrelationship between various types of building systems.
- Skill and ability to apply preservation skills to a range of appropriate preservation treatments; knowledge and ability to recognize treatments that offer potential for damage, and the ability to perform maintenance skills for various building materials and structures.
- Basic ability to operate standard stationary power equipment.
- Ability to apply maintenance skills in a broad range of crafts related to the practice of historic preservation.

### NPS Training to Attain These Competencies

### Alternate Sources of Training

A variety of non-NPS sources offer training

### Preservation Gardener

### Entry Level

- Basic knowledge of materials, environmental or other workplace safety hazards.
- Ability to properly use personal protective equipment.

- Basic knowledge of the principles and objectives of preservation and recognizing the need to minimize damage, deterioration and/or alteration of historic fabric and structures.
- Awareness of cultural resource preservation legislation, policies, guidelines, standards and procedures, particularly the Secretary of the Interior's Standards and Guidelines and DO-28.
- Awareness of various styles, types and characteristics of cultural landscapes.
- Basic knowledge of landscape maintenance and gardening practices.
- Basic knowledge of common woody and herbaceous plants, landscape materials and built features.
- Ability to use and maintain gardening tools, supplies and equipment.

### NPS Training to Attain These Competencies

#### Cutting Edge: Introduction to Cultural Landscape Safety

This course will address the safe use of Hand tools such as shovels, rakes, pruners, saws, shears, axes, picks, pulaskis, Power tools such as chain saws, power hedgers, lawn mowers, chippers, and trimming equipment, Chemicals such as fertilizers, insecticides, herbicides, Fuels used in the operation of machinery, Various personal protective equipment and the appropriate selection and use off PPE for various activities.

#### Alternate Sources of Training

A variety of non-NPS sources offer training

#### Developmental Level

- Ability to recognize and mitigate materials, environmental or other workplace hazards.
- Working knowledge of the principles and objectives of preservation and apply sound preservation practices to minimize damage, deterioration and/or alteration of cultural landscapes.
- Basic knowledge of cultural resource preservation legislation, policies, guidelines, standards and procedures, particularly the Secretary of the Interior's Standards and Guidelines and DO-28 as they apply to the preservation of cultural landscapes.
- Basic knowledge of the various styles, types and characteristics of cultural landscapes and awareness that different maintenance practices are applicable in their care.



- Working knowledge of landscape maintenance and gardening practices and their application to landscape preservation.
- Working knowledge of a broad range of woody and herbaceous plants, landscape materials and built features.
- Basic knowledge of construction documents and the ability to carry out instructions to successfully complete landscape maintenance.
- Ability to assist with field inspections and preparation of condition assessment reports.

### NPS Training to Attain These Competencies

#### Alternate Sources of Training

A variety of non-NPS sources offer training

#### Full Performance Level

- Ability to instruct others to recognize and respond to materials, environmental or other workplace safety hazards.
- Working knowledge of and ability to apply cultural resource preservation legislation, policies, guidelines, standards and procedures, particularly the Secretary of the Interior's Standards and Guidelines, DO-28, NEPA, and section 106 compliance to landscape preservation practice.
- Ability to recognize various styles, types and characteristics of cultural landscapes and to apply appropriate preservation maintenance practices.
- Advanced knowledge of landscape maintenance and gardening practices as they apply to landscape preservation.
- Ability to identify and provide creative solutions to unique preservation issues based on knowledge of preservation principles and objectives.
- Advanced knowledge of woody and herbaceous plants, landscape materials and built features.
- Working knowledge of construction documents and the ability to apply that knowledge to complete landscape preservation maintenance tasks.
- Ability to identify, locate and access sources of additional information and expertise related to historic landscape management, preservation horticulture, landscape preservation and related disciplines.

- Ability to accomplish field inspections, prepares condition assessment reports and cost estimates for landscape preservation maintenance.
- Ability to implement a detailed inventory and condition assessment program to regularly monitor, evaluate and identify preservation work.
- Ability to accurately and completely document preservation.
- Ability to assist with developing and independently implement a landscape preservation maintenance program which addresses site-specific routine and cyclic maintenance needs.

#### NPS Training to Attain These Competencies

#### Alternate Sources of Training

A variety of non-NPS sources offer training